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ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	240883	Job #:	17742
Sample Name/Number:	Well 1-1		
Company:	Cabot Oil & Gas		
Date Sampled:	3/14/2012		
Container:	Dissolved Gas Bottle		
Field/Site Name:	PASUS-COGEHS-Shields, G-120314		
Location:	198.00-1,069.00,000.		
Formation/Depth:			
Sampling Point:			
Date Received:	3/19/2012	Date Reported:	3/30/2012

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Hydrogen Sulfide	na			
Helium	0.0853			
Hydrogen	0.636			
Argon	0.0432			
Oxygen	0.055			
Nitrogen	1.93			
Carbon Dioxide	0.006			
Methane	94.82	-50.53	-280.6	
Ethane	2.37	-42.65		
Ethylene	nd			
Propane	0.0536	-44.6		
Propylene	0.0002			
Iso-butane	0.0011			
N-butane	0.0020			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 1007

Specific gravity, calculated: 0.571

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.